

No matter what size agency you work for, if you are a criminal investigator and have not been trained in Cell Phone Technology & Digital Forensics, You DO NOT have all of the Evidence.

The primary objective of +SMART training is to provide practical instruction to attendees on the unique sets of evidence available on Smartphones and the advanced location-based evidence available on Smartphones and cellular networks. The PATCtech +SMART certification provides attendees a practical exercise and study for law enforcement and members of the public safety / criminal justice community on the following:

- Smartphone operating systems, including iPhone®, Android® and more.
- Advanced data recovery and analysis of data on Smartphones
- Understanding advanced cellular communication technologies for plotting suspect locations
- Practical understanding of IPv6, the cloud, 4G and mobile hotspot data on Smartphones
- Wi-Fi analysis from Smartphone data
- Trilateration
- Tower Discovery
- and more...

TESTING

Details will be given during class for testing procedures.

For more +SMART details visit:

<http://patctech.com/smart>

****Note:** It is beneficial, yet not required, for students to bring a PC based laptop computer with a current operating system.

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Public Agency Training Council

5235 Decatur Blvd
Indianapolis, Indiana 46241

Phone: 1-800-365-0119
Fax: 317-821-5096
Email: questions@patc.com

Visit us on the Web at:
www.patc.com

January 29, 30, 31, February 1 & 2, 2018 • Columbus, Ohio

Public Agency Training Council

Mark Waterfill, President



Sponsored By:

Columbus Police Department

Columbus, Ohio

Training Seminar

+SMART

**Smartphone Forensics and
Cellular Technology Certification for Investigators**

Only offered by Public Agency Training Council

This course qualifies for PATCtech +SMART Certification and /or Re-Certification for additional information visit www.patctech.com/smart

Who Should Attend: All New and Experienced Investigators and Specialists --- Drug Investigators, Homicide Investigators, Sex Crimes Investigators, Burglary/Robbery Investigators, Fire/Arson Investigators, Private Investigators, I.T. Specialists and Digital Forensics Examiners.

Instructor

**Glenn K. Bard, CISSP, CFCE, CEECS, CHFI, A+, Network+, Security+, ACE
Pennsylvania State Police (Retired)**

Glenn Bard is a retired Pennsylvania State Trooper First Class and U.S. Veteran of Operation Desert Storm. In 1999 Glenn began Computer Crime Investigations for the PA State Police and has since investigated crimes across the United States ranging from Child Pornography to Criminal Homicide. Glenn has also conducted forensic examinations for city, state and federal Law Enforcement Agencies including the FBI, US Postal Inspectors, and I.C.E. as well as foreign governments. In the last 15 years he has conducted exams on over 8000 devices ranging from simple phone exams to encrypted RAID 5 servers.

During his career Glenn has continued his education and has achieved and maintained several certifications including CISSP, EnCE, CFCE, CHFI, A+, Network+, Security+, and ACE. While Glenn was still a sworn State Trooper he also obtained the Class "A" Wiretap Certification, which expired upon his retirement.

Due to his training and experience, Glenn has been certified as an expert in Pennsylvania Court of Common Pleas, State of Tennessee, United States Virgin Islands and the United States Federal Court System in the areas of Digital Forensics, Cellular Technology and Computer Technology. Glenn has also been certified as an expert Instructor in the State of Maryland and Arkansas.

In 2010, Glenn was selected by the US Attorney's office in Pittsburgh and OPDAT to teach computer crime investigations and computer forensics in Tirana, Albania.

Additionally, he has been a speaker for organizations of all sizes and types, both public and private, to include the Cyril H. Wecht Institute of Forensic Science and Law, Pennsylvania Fraternal Order of Police, Illinois Fraternal Order of Police, New Jersey Fraternal Order of Police, Federal Fraternal Order of Police, and the Institute of Law Enforcement Education, as well as numerous Homicide, Arson, Fraud and Drug conferences.

Several of the cases Glenn has worked on have received National coverage, to include Fox News, Dateline, Investigation Discovery, the Associated Press, Yahoo!, the New York Times, Pittsburgh Post-Gazette, Pittsburgh Tribune Review and more. Several of the cases have also been made into books, movies, and television specials.

In 2013 alone Glenn testified in several murder trials in numerous states concerning Cellular forensics, Computer forensics and Cellular records analysis and mapping.

Additionally, Glenn has received numerous awards during his military and police career, including Honorable Discharges from both the United States Army and the Pennsylvania State Police. Another great honor that Glenn is very proud of is being selected to become a Project ALERT volunteer for the National Center for Missing and Exploited Children.

Glenn is the Chief Technical officer for PATCtech, overseeing all Digital Forensic and Data Services. Glenn has acted as technical consultant and/or personally developed Computer Forensic Programs at multiple Colleges, to include Westmoreland County Community College where he was a faculty instructor prior to retiring.

January 29, 30, 31 & February 1 & 2, 2018

Columbus, Ohio

Register online at: www.patc.com

Smartphone Forensics and Cellular Technology Certification for Criminal Investigators

Course Objectives:

This training module will cover practical instruction on the forensic techniques required for acquiring and investigating evidence from Smartphone and cellular technologies for the purpose of case development and successful prosecution.

Review of Cellular Networks & Introduction to Smartphone Technology: The training will start with a review of the different types of cellular networks and introduction to Smartphone technology. As well as, what types of operating systems are used by devices such as the iPhone® and Droid®, including jailbreaking and rooting devices.

Smartphone Operating Systems: Utilizing both classroom and hands-on exercises each attendee will be provided the skills required to understand Smartphone operating systems and skills needed to recover data from these devices using a variety of applications.

Data Recovery from Smartphones: Attendees will be provided images of devices to examine and learn where to find artifacts that may be important to the investigator. Issues covered will include examining backups of synchronized phones, Wi-Fi analysis, Skype® analysis and internet history.

Application Analysis: The student will be instructed on how to analyze applications that may not be supported by forensic software, by analyzing the SQL, Plist and XML files on the devices.

Router Interrogation: Students will be given practical instruction on interrogating routers for the purpose of identifying Smartphones previously connected to the routers and how this information can identify potential suspects at a scene over a time period.

Smartphone Connection Logs: Students will be given practical instruction on determining if the phone was connected to the internet via Wi-Fi or if it was connected to a cellular network. In this section students will be introduced to IP addressing on Smartphones, IPv6 and mobile hotspots. The purpose of this portion of instruction is to assist investigators in finding historical locations of the suspect and where to look for additional sources of evidence.

Practical Exercises: The class will include practical exercises in which the students will be supplied forensic images of Smartphones to examine, locate the evidence, prepare a report and practice testifying to their findings.

Seminar Agenda Smartphone Forensics and Cellular Technology Certification for Criminal Investigators

January 29, 30, 31, February 1 & 2, 2018 • Columbus, Ohio

Monday, January 29, 2018

8:00 a.m.—8:30 a.m.
8:30 a.m.—12:00 p.m.
(With Breaks)

Registration
Review of Basic Forensics

- GSM, CDMA
- Logical vs Physical Data
- Conventional phones vs Smartphones
 - What is a Android? Android rooting
 - iPhones®, jailbroken and unlocked
 - RIM® Devices

12:00 p.m.—1:00 p.m.

Lunch (On Your Own)

1:00 p.m.—4:30 p.m.
(With Breaks)

SMARTPHONES
Secureview

- What is it
- Android Acquisition & Deleted Data Recovery
- iPhone Unlocking features
- sv Data Analysis features

Tuesday, January 30, 2018

8:00 a.m.—9:00 a.m.
9:00 a.m.—12:00 p.m.
(With Breaks)

Brief Review of Day One
Oxygen Forensic Suite®

- Data Acquisition of Phone

12:00 p.m.—1:00 p.m.

Lunch (On Your Own)

1:00 p.m.—4:30 p.m.
(With Breaks)

Oxygen Forensic Suite® (cont.)

Wednesday, January 31, 2018

8:00 a.m.—9:00 a.m.
9:00 a.m.—12:00 p.m.

Brief Review of Day One & Two
Mobiledit

- Live View vs Back-up of Device
- Extracting Contents of Applications

12:00 p.m.—1:00 p.m.

Lunch (On Your Own)

1:00 p.m.—4:30 p.m.
(With Breaks)

Application Analysis
Understanding Applications

- DB, SQL, Plist and XML Examination

Thursday, February 1, 2018

8:00 a.m.—10:00 a.m.

Review of Tower basics

- Omni directional
- 3 sided
- Non typical towers

10:00 a.m.—12:00 p.m.

Cell Sites in Greater Detail

- Different types of cell sites and their technology

Microcells, COW's and other portable cell sites
Cell Splitting
Comparing Results in Rural vs Urban Areas

12:00 p.m.—1:00 p.m.

Lunch (On Your Own)

1:00 p.m.—4:30 p.m.
(With Breaks)

Advanced Mapping

- Mapping
- Converting different GPS measurements
- Azimuth of sides
- Beam Widths
- Determining distances
- Covering numerous states and jurisdictions
- Directions of Travel

Friday, February 2, 2018

8:00 a.m.—12:00 p.m.

Class Practical
Testing the Results and Recreating the Scenario
Testifying in court
+SMART testing procedures given

12:00 p.m.

Training Certificate Presentation

3 Ways to Register for a Seminar!

1. **Register Online** at www.patc.com — Yellow link upper left corner
2. **Fax Form** to Public Agency Training Council **FAX: 1-317-821-5096**
3. **Mail Form** to

Public Agency Training Council
5235 Decatur Blvd
Indianapolis, Indiana 46241

***NEW**

Federal ID# 47-4078912

***NEW**

***** Pre-payment is not required to register *****

Upon receiving your registration we will send an invoice to the department or agency .

Checks, Claim Forms, Purchase Orders should be made payable to:

Public Agency Training Council

If you have any questions please call

317-821-5085 (Indianapolis)

800-365-0119 (Outside Indianapolis)



Seminar Title:	Smartphone Forensics & Cellular Technology +SMART	Seminar ID #15155
Instructor:	Glenn K. Bard	
Seminar Location:	Columbus, Ohio Division of Police Training Academy 1000 North Hague Avenue Columbus, Ohio 43204-2121	
When:	January 29, 30, 31, February 1 & 2, 2018	
Registration Time:	8:00 A.M. (January 29, 2018)	Note: Identify with the Columbus Police Training to receive discounted room rates
Hotel Reservations:	Drury Inn 88 East Nationwide Blvd Columbus, Ohio 43215 1-614-221-7008 \$85.00 Single or Double (plus tax)	
Registration Fee:	\$695.00 Includes Smartphone Forensics & Cellular Technology Certification Training Course Material, Coffee Breaks, and Certificate of Completion.	

Names of Attendees

1. _____

2. _____

3. _____

4. _____

Agency _____

Invoice To Attn: _____
(Must Be Completed)

Address _____

City _____ **State** ____ **Zip** _____

Email _____

Phone _____

Fax _____

Cut Along Dotted Line